

AMENDMENTS TO THE CLAIMS

Claims 1-25. (Canceled)

26. (Previously presented) A method of analyzing samples of polysaccharides or glycoprotein containing samples of plant or animal origin including textiles, wood pulp, cellulosic materials, starch, glycogen and plant products comprising the steps of: producing a cold water extract by extracting the samples with cold water; treating insoluble materials from the cold water extract step with dilute hot acid to yield an acid extract; neutralizing the acid extract; treating the neutralized acid extract with an alcohol to make an alcohol precipitate; redissolving the alcohol precipitate in an aqueous solution; and analyzing the aqueous solution to reveal a carbohydrate multimer.

27. (Previously presented) A method of analyzing samples of polysaccharides or glycoprotein containing samples of plant or animal origin including textiles, wood pulp, cellulosic materials, starch, glycogen and plant products comprising the steps of: producing a cold water extract by extracting the samples with cold water; treating insoluble materials from the cold water extract step with dilute hot acid to yield an acid extract; neutralizing the acid extract; analyzing the aqueous solution to reveal a carbohydrate oligomers pattern and comparing to that of known reference standards.

28. (Previously presented) The method of analyzing of claims 26 or 27, further comprising the step of analyzing soluble mono- and oligosaccharides contained in cold water extract comprising the steps of: producing a cold water extract by extracting the samples with cold water and comparing the relative distribution of individual mono- and oligosaccharides to that of known reference standards.

29. (Previously presented) The method of analyzing of claim 26, wherein the alcohol used is selected from the group consisting of ethanol and 1-propanol.

30. (Previously presented) The method of analyzing of claim 28, herein both ethanol and 1-propanol are used to make alcohol precipitates, and wherein the step of analyzing the aqueous solution compares redissolved ethanol precipitate to redissolved 1-propanol precipitate.

31. (Previously presented) The method of analyzing of claim 26, wherein the redissolved alcohol precipitate is subjected to enzymatic digestion with a series of endoglycosidases and exoglycosidases prior to the step of analyzing, and wherein the results of different enzymatic digestions are compared in the step of analyzing.

32. (Previously presented) The method of analyzing of claim 27, wherein the neutralized extract is subjected to enzymatic digestion with a series of endoglycosidases and exoglycosidases prior to the step of analyzing, and wherein the results of different enzymatic digestions are compared in the step of analyzing.

33. (Previously presented) The method of analyzing claims 31 or 32, wherein the endoglycosidases are selected from the group consisting of endo β -1,4-glucanase, exo- α -1,4-glucanase and α -1-4-glucan glucohydrolase.

34. (Previously presented) The method of analyzing of claims 26 or 27, wherein more heavily laundered textile samples are distinguished from less heavily laundered textile samples by a detection of fewer carbohydrate multimers, or quantitative differences or different relative abundance of glycan oligomers when the extract is analyzed.

35. (Previously presented) The method of analyzing of claims 26 or 27, wherein the identity of the species of a sample of wood or other polysaccharide containing material of plant origin is determined and/or highly processed wood pulp is distinguished from less highly processed wood pulp by a difference in the relative quantity and distribution of carbohydrate multimers when the extract is analyzed and compared to appropriate reference samples.

36. (Previously presented) The method of analyzing of claim 26, wherein a food grain is distinguished from other food grains by analyzing the aqueous extract and comparing the relative abundance of glycoconjugates in the extract to a similarly prepared extract of known samples of food grains.

Claims 37-40 (Canceled)

41. (New) A method of claims 26 or 27 wherein the sample is waste water and the sample is analyzed for the presence of glycan oligomers as evidence of discharge of polysaccharides from domestic laundry activities or other processing of polysaccharide containing material further comprising the step of analyzing the waste water sample directly and treating the waste water sample with dilute hot acid to yield an acid extract; neutralizing the acid extract; analyzing the aqueous solution to reveal a carbohydrate oligomer pattern and comparing the relative distribution of individual carbohydrate oligomers to that of known reference standards to determine the ultimate source of the polysaccharide material.

42. (New) A method of claims 26 or 27 in which the sample contains a plant gum and the subsequent comparison of the glycan oligomer pattern with that of known samples of plant gums enables the identification of the plant gum in the unknown sample of food, pharmaceutical or work of art for the purpose of authenticating the work of art based on the plant gums known to have been used by the artist.

43. (New) A method of identifying the source contribution of polysaccharides of plant or animal origin of dust in air by using the method of claims 26 or 27 on dust removed from an air sample by a filter to identify the polysaccharide based on the glycan oligomer distribution when compared with the glycan oligomer distribution pattern of a reference sample.

44. (New) A method to identify differences due to environmental or genetic factors in alpha-glycans such as starch or glycogen using the method of claims 26 or 27 to

identify the polysaccharide by comparing the relative distribution of glycan oligomers to the relative distribution of glycan oligomers in a similar extract of a reference sample.